

CLAIMS

1. A computer system comprising at least two processing sets, each of which includes main memory, and a bridge connecting the processing sets, wherein at
5 least a first processing set further including a dirty memory having dirty indicators for indicating dirtied blocks of the main memory of the first processing set, and the bridge includes a direct memory access controller that is operable to copy blocks of the first processing set indicated in the dirty memory to the main memory of another processing set.
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2. The computer system of claim 1, wherein the direct memory access controller is operable to search the dirty memory for dirty indicators indicative of dirtied blocks.
- 15 3. The computer system of claim 1, wherein the dirty memory comprises control logic operable to search the dirty memory for dirty indicators indicative of dirtied blocks.
4. The computer system of claim 3, wherein the control logic is operable to
20 output references to the dirtied blocks of the main memory to be copied.
5. The computer system of claim 4, wherein the control logic is operable to buffer references to the dirtied blocks of the main memory to be copied.
- 25 6. The computer system of claim 4, wherein the references to the dirtied blocks comprises addresses for the dirtied blocks.
7. The computer system of claim 1, wherein a block of main memory is a page of main memory.

8. The computer system of claim 1, wherein each dirty indicator comprises a single bit.
- 5 9. The computer system of claim 1, wherein the direct memory access controller is operable to instigate a search of the dirty memory for dirty indicators indicative of dirtied blocks.
- 10 10. The computer system of claim 1, wherein each processing set includes a dirty memory.
11. The computer system of claim 1, wherein the processing sets are operable in lockstep, the computer system comprising logic operable to attempt to reinstate an equivalent memory state in the main memory of each of the processor following a lockstep error.
- 15 12. A method of reintegrating the main memory of a computer system comprising at least two processing sets, each of which includes main memory, and a bridge connecting the processing sets, the method comprising recording an indicator of a block of main memory of a first processing set that has been dirtied in a dirty memory in the first processing set and a direct memory access controller in the bridge copying blocks of the first processing set indicated in the dirty memory to the main memory of another processing set.
- 20 13. The method of claim 12, wherein the direct memory access controller searches the dirty memory for dirty indicators indicative of dirtied blocks.
- 25 14. The method of claim 12, wherein dirty memory control logic searches the dirty memory for dirty indicators indicative of dirtied blocks.

15. The method of claim 14, wherein the control logic outputs references to the dirtied blocks of the main memory to be copied.
- 5 16. The method of claim 15, wherein the control logic buffers references to the dirtied blocks of the main memory to be copied.
17. The method of claim 15, wherein the references to the dirtied blocks comprises addresses for the dirtied blocks.
- 10 18. The method of claim 12, wherein a block of main memory is a page of main memory.
19. The method of claim 12, wherein each dirty indicator comprises a single bit.
- 15 20. The method of claim 12, wherein the direct memory access controller instigates a search of the dirty memory for dirty indicators indicative of dirtied blocks.
- 20 21. The method of claim 12, wherein the processing sets are operable in lockstep, the method comprising attempting to reinstate an equivalent memory state in the main memory of each of the processor following a lockstep error.